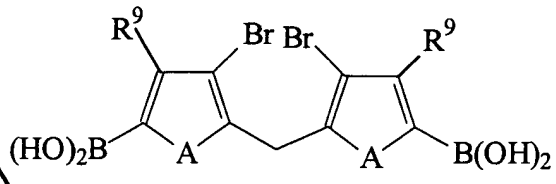
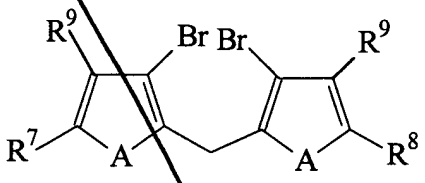
order to obtain the compound of formula (XVI):



(XVI)

and subsequently contacting with a mixture of an alkylating agent in the presence of an transition metal complex compound for obtaining the compound of formula (XV);



(XV)

and

iii) contacting the alkylated compound obtained by step ii) with a coupling agent selected from the group consisting of copper (II) chloride, iodine and Mg/Pd in order to obtain the compound of formula (VII).

REMARKS

Claims 1-27 are pending in this application. Upon entry of this Amendment, claims 1, 2, 4, 6, 9-10, 16-21, and 23-27 will be amended.

The claims have been amended to even more particularly point out and distinctly claim Applicants' invention. Table 1 has been amended to correct a typographical error in the

catalyst designation of example 3. Support for this amendment can be found in the priority document. No new matter has been added by these amendments.

Reconsideration and allowance of the application are respectfully requested.

Claim Objections

The Examiner objected to claims 1, 16, 22, and 24-26 for allegedly not providing a limitation in which A and B are CR^9. Applicants have added a claim limitation to address this objection. Applicants respectively request reconsideration and withdrawal of the objection.

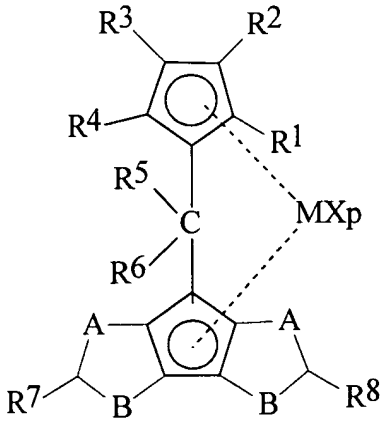
The Examiner has objected to claim 4 as allegedly containing contradictory limitations. Applicants have amended the claim to further clarify the language. Applicants respectively request reconsideration and withdrawal of the objection.

The Examiner has objected to claim 6 as containing misspelled words and containing an irrelevant claim limitation. Applicants have corrected the cited spelling mistake and deleted the cited language. The Examiner has also objected to claim 6 as being unclear as to how the subscript "j" can be a non-integer number. The thryalkylaluminum compounds represented by the formula $H_jAlR^{12}{}_{3-j}$, and $H_jAlR^{12}{}_{6-j}$ are solids that can contain hydrogen atoms in the crystal as impurities. For example, if one crystal unit of thryalkylaluminum is represented by $HAlR_2$ and 9 crystal units are AlR_3, the empirical formula of the ten-unit crystal would be $H_{0.1}AlR_{2.9}$. Applicants respectively request reconsideration and withdrawal of the objection.

The Examiner has objected to claim 8 on the basis that the term "compatible" is not clear. The term "compatible anion" is widely used and well accepted in the relevant patent literature; for example, Applicants note granted U.S Patent No.'s 6,372,684 (claim 1), 6,369,176 (claim 4), 6,160,066 (claim 7), 5,665,800 (claim 23), 5,646,084 (claim 8), 5,596,052 (claim 3)

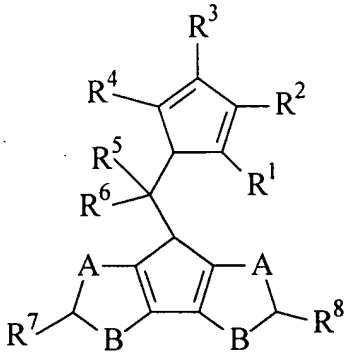
and 5,543,480 (claim 10). Applicants respectively request reconsideration and withdrawal of the objection.

The Examiner has objected to claim 16 on the basis that substituents R^1 to R^5 shown in the fulvene (IV) compound were used in previous claims. However, the use of these substituents is consistent with the fact that the fulvene compound is used in the preparation of the compound of formula (I). In other words, the compound of formula (I)



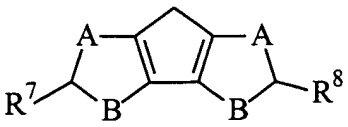
(I)

is prepared by using a ligand of formula (II)

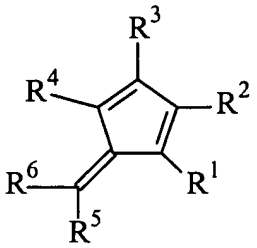


(II)

which in turn is prepared by reacting the compound of formula (III) and (IV)



(III)



(IV)

Applicants respectfully submit that the substituents R^1-R^5 are consistent in the claims, and request reconsideration and withdrawal of the objection.

The Examiner has objected to claim 17 as being informal on the basis that all quaternary ammonium salts qualify as protonating agents. Applicants have amended "quaternary ammonium salts" to "ammonium chloride." Support for this amendment can be found on page 18, lines 8-9 of the specification. Applicants respectively request reconsideration and withdrawal of the objection.

The Examiner has objected to claims 18-20, 23 and 27 on the basis that "copper chloride" should be rewritten as "copper (II) chloride." Applicants have amended the claim language as suggested by the Examiner. Applicants respectively request reconsideration and withdrawal of the objection.

The Examiner has objected to claim 20 on the basis that the term "are" should be "is." Applicants have corrected the claim language as suggested by the Examiner. Applicants respectively request reconsideration and withdrawal of the objection.

The Examiner has objected to claim 22 on the basis that the ligand (II) allegedly contains no provision for the presence of a double bond in the flanking heterocyclic rings. Claim 22 has been cancelled. Applicants respectively request reconsideration and withdrawal of the objection.

Claim Rejections

Rejection Under 35 U.S.C. § 112, 1st Paragraph

Claim 1 was rejected under 35 U.S.C. §112, first paragraph, on the ground that the claim contained subject matter not adequately described in the specification. Applicants have amended claim 1 to delete the cited language and incorporate the limitations of claim 8. Applicants respectively request reconsideration and withdrawal of the rejection.

Rejection Under 35 U.S.C. § 112, 2nd Paragraph

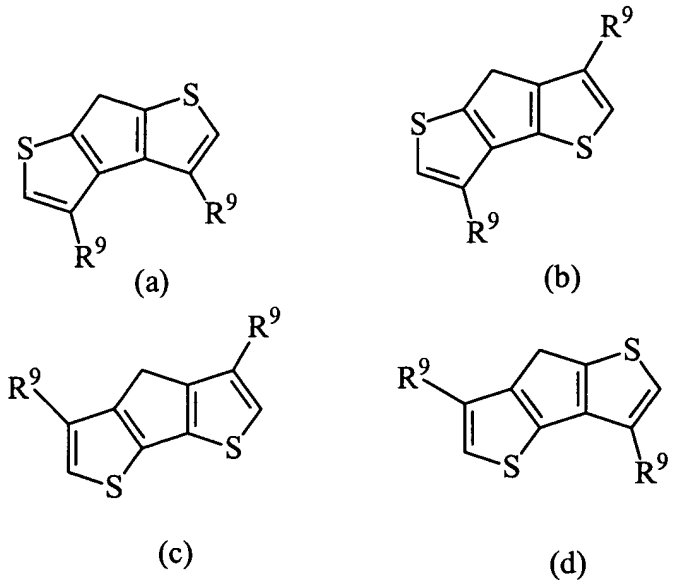
Claims 1, 8-9, 16, and 18-27 were rejected under 35 U.S.C. §112, second paragraph, on the ground of indefiniteness.

Claim 1 was rejected as containing improper Markush language. Applicants respectively traverse the rejection. Claim 1 as amended recites " ....(B) at least one of an alumoxane and a compound of formula D^+E^-...." Applicants respectively submit that this language is not indefinite since the phrase "at least one of" is commonly used language that clearly means that the element (B) is limited to (i) an alumoxane, or (ii) a compound of formula D^+E^-, or (iii) a mixture of (i) and (ii). Applicants respectively request reconsideration and withdrawal of the rejection.

Claim 1 was rejected being indefinite for using the term "capable." Applicants have deleted the cited language and respectively request reconsideration and withdrawal of the rejection.

Claims 1, 16, 22, 24 , and 26 have been rejected as allegedly being indefinite for

using the phrase "wherein the rings containing A and B have a double bond in the allowed position having an aromatic character." Applicants respectively traverse this rejection. For the moiety containing variables A and B, there are four different isomers because of the four different arrangements of the variables A and B. These are:



Taking into account the proviso of the claims, there are four possible positions of the double bonds. Applicants therefore submit that the term "allowed position" is not indefinite. With respect to the aromatic character of the rings containing A and B in the free ligands, the outer rings containing the variables A and B containing the double bonds are always aromatic, in view of the fact that these rings have six delocalized π electrons (two for each double bond and two for the π doublet of sulfur or oxygen atom). The Examiner is respectfully referred to Encyclopedia of Chemical Technology, Fourth Edition, volume 24, pages 34-36 (enclosed). Applicants respectfully request reconsideration and withdrawal of the rejection.

The Examiner has rejected claims 1, 16, 18-20, 22-23, and 25-27 as allegedly being indefinite for reciting that substituents "optionally contain heteroatoms belonging to groups 13 or 15-17 of the Periodic Table of the Elements. Applicants respectfully traverse this rejection. The phrase "optionally containing heteroatoms" is widely used and well accepted in the relevant patent literature; for example, Applicants note granted U.S. Patent No.'s 6,288,181 (claim 1), 6,228,957 (claim 1), 6,365,539 (claim 17), 6,365,688 (claim 7), 6,340,730 (claim 3), 6,316,562 (claim 1), 6,274,529 (claim 2), 6,172,168 (claim 2), 5,919,723 (claim 1), 6,060,572 (claim 2). Therefore, the language of the claims is not indefinite, and would certainly be sufficient for one skilled in the art to determine the scope of the claims. Applicants respectfully request reconsideration and withdrawal of the rejection.

Claims 1, 16, 22, and 25-26 have been rejected as allegedly being indefinite for reciting that R^1-R^6 can bear substituents. Applicants have deleted the cited language and respectfully request reconsideration and withdrawal of the rejection.

Claim 8 has been rejected for use of the terms "capable of" and "able to." Applicants have amended the cited language. Applicants respectfully request reconsideration and withdrawal of the rejection.

Claim 9 has been rejected as being indefinite for use of the term "anion Z^-". Applicants have corrected the typographical error, changing "Z^-" to "E^-". Applicants respectfully request reconsideration and withdrawal of the rejection.

Claims 18-21, 23 and 27 were rejected for allegedly containing improper Markush language. Applicants have amended the cited language. Applicants respectfully request reconsideration and withdrawal of the rejection.

Claim 25 has been rejected for allegedly being indefinite for failing to include

provisions for the presence of double bonds in the auxiliary heterocyclic rings. Applicants have amended claim 25 to recite that the rings containing A and B have a double bond in the allowed position having an aromatic character, and respectfully request reconsideration and withdrawal of the rejection.

Rejection Under 35 U.S.C. §102(b)

(a) Response to Rejection of Claims 1-7, 10-12, 16 and 17 under 35 U.S.C. §102(b) as being anticipated by WO98/22486 to Ewen et al. and Ewen et al. (J. Am. Chem. Soc. 1998).

In response to the rejection of claims 1-7, 10-12, 16 and 17 under 35 U.S.C. §102(b) as being unpatentable over PCT Application WO 98/22486 ("PCT '486") or the journal article J. A. Chem. Soc., 1998 by Ewen et al. ("Ewen"), Applicants traverse the rejection and respectfully submit that the cited references do not teach or suggest all the elements of the claims.

In one embodiment of the present invention, claim 1 has been amended to recite a process for the preparation of polymers of ethylene obtained by contacting a metallocene of formula (I) where at least one of the substituents R^1, R^2, R^3, R^4, R^7, and R^8 is not hydrogen. In another embodiment of the present invention, claim 16 has been amended to recite a process for the preparation of a ligand of formula (II) where at least one of the substituents R^1, R^2, R^3, R^4, R^7, and R^8 is not hydrogen. Support for these amendments can be found at page 2, line 17 of the present specification. In contrast, Ewen discloses propylene polymerization using isopropyledene(cyclopentadienyl)(7-cyclopentadithiophene) and isopropyledene (3-tertbutyl-

cyclopentadienyl)(7-cyclopentadithiophene) zirconium dichloride as a catalyst component. Ewen therefore does not teach all the elements of the presently claimed invention. PCT '486 does not describe a specific class of compounds used in the polymerization of ethylene. The only example of ethylene polymerization is example 7, where isopropyledene(cyclopentadienyl)(7-cyclopentadithiophene) is used. The cited metallocene does not teach or suggest all the elements of the presently claimed invention since as discussed above, the compounds of the reference are not substituted. Therefore, Applicants submit that the cited references do not teach or suggest all the elements of the presently claimed invention. Reconsideration and withdrawal of the rejection are respectfully requested.

Rejection Under 35 U.S.C. §102(b)

(b) Response to Rejection of Claims 22 and 25 under 35 U.S.C. §102(b) as being anticipated by PCT '486.

In response to the rejection of claims 22 and 25 under 35 U.S.C. §102(b) as being anticipated by PCT '486, Applicants traverse the rejection and respectfully submit that the cited reference does not teach or suggest all the elements of the claims.

With respect to claim 22, this claim has cancelled. Applicants respectfully submit that this rejection is now moot. With respect to claim 25, the Examiner argues that the reference anticipates the presently claimed invention because claim 1 of the reference discloses that the metallocene can contain an element belonging to Group 3, 4, 5, or 6, or to the lanthanide or actinide series of the Periodic Table. While the formula of the reference is indeed so broad as to encompass a vast number of compounds, it does not specifically teach or suggest the substituted metallocene compounds of the invention. The Examiner argues that compounds substituted in

the number 3 position of the cyclopentadienyl ring are within the purview of the invention. However, there is no disclosure of this substitution pattern in PCT '486. Therefore, one skilled in the art would not at once envision the presently claimed invention (MPEP 2131.02) from the broad formula disclosed by the reference; particularly in view of the fact that all the specific compounds cited by the reference are excluded by the present claims. Therefore, Applicants respectfully submit that the cited reference does not teach or suggest all the elements of the presently claimed invention. Reconsideration and withdrawal of the rejection are requested.

Rejection Under 35 U.S.C. §102(b)

(c) Response to Rejection of Claims 18 and 24 under 35 U.S.C. §102(b) as being anticipated by Tetrahedron 1968, 24, 3381 to Kraak et al.

In response to the rejection of claims 18 and 24 under 35 U.S.C. §102(b) as being unpatentable over 35 U.S.C. §102(b) to the reference Tetrahedron 1968, 24, 3381 by Kraak et al. ("Kraak"), Applicants traverse the rejection and respectfully submit that the cited reference does not teach or suggest all the elements of the claims.

Claim 18 has been amended to recite that R^7 and R^8 are selected from the group consisting of C1-C20-alkyl, C3-C20-cycloalkyl, C2-C20-alkenyl, C6-C20-aryl, C7-C20-alkylaryl, and C7-C20-arylalkyl radical. Support for this amendment can be found at page 18, lines 11-14 of the specification. Claim 24 similarly restricts the selection of R^7 and R^8. In contrast, the compounds of Kraak contain no substituents at the number 2 and number 5 position of the cyclopentadithiophene compound. Moreover, the Kraak reference itself describes the synthesis of different isomers (see page 3381 compounds of formulae II-VI), and actually refers to an earlier publication for the synthesis of formula I (*J. Org. Chem*, 29, 2455 (1964) -- enclosed). However, this document does

not teach or suggest the claimed process. Therefore, Applicants submit that the cited reference does not teach or suggest all the elements of the presently claimed invention. Reconsideration and withdrawal of the rejection respectfully are requested.

Rejection Under 35 U.S.C. § 103

(d) Response to Rejection of Claims 8 and 9 under 35 U.S.C. § 103(a) as being unpatentable over PCT '486 in view of U.S. Patent No. 5,198,401 to Turner et al.

In response to the rejection of claims 8 and 9 under 35 U.S.C. § 103(a) as being unpatentable over PCT '486 in view of U.S. Patent No. 5,198,401 to Turner et al. ("Turner"), Applicants respectfully traverse the rejection and submit that a *prima facie* case of obviousness has not been presented.

In order to establish a *prima facie* case of obviousness under § 103, the Examiner must establish all three of the following essential criteria: (1) the cited references must teach or suggest each of the claimed elements; (2) there must be a motivation in the cited prior art to combine the references as suggested by the Examiner; and (3) the cited references must provide a basis for a reasonable expectation for success. The motivation to combine and the reasonable expectation for success must come from the cited prior art and not the Applicants' specification. Further, it is not enough that a reference can be modified absent a suggestion in the cited prior art to undertake such modification.

As discussed above, PCT '486 does not describe a specific class of compounds used in the polymerization of ethylene as in the presently claimed invention. The only specific example of ethylene polymerization is example 7, where isopropyledene(cyclopentadienyl)(7-

cyclopentadithiophene) is used. The reference does not teach or suggest the process of the presently claimed invention. Turner does not remedy the deficiencies of PCT '486. Therefore, the combination of references does not teach or suggest all the important elements of the presently claimed invention. In addition, the cited art does not provide a motivation to combine the references or suggest a reasonable expectation of success. Therefore, a *prima facie* case of obviousness has not been made out. However, even if a *prima facie* case of obviousness has been made, Applicants respectfully submit that unexpected results have been disclosed in the present specification that overcome such a case. The performance of the compound disclosed in PCT '486 is shown in comparative examples 8, 9, 18, and 23 of the present specification, which clearly illustrates that when used in a process for copolymerizing ethylene, the compound of the reference exhibits lower activity. Reconsideration and withdrawal of the rejection are respectfully requested.

(e) Response to Rejection of Claims 13-15 under 35 U.S.C. § 103(a) as being unpatentable over PCT '486 in view of U.S. Patent No. 5,948,873 to Santi et al.

In response to the rejection under 35 U.S.C. § 103(a) as being unpatentable over PCT '486 in view of U.S. Patent No. 5,948,873 to Santi et al. ("Santi"), Applicants respectfully traverse the rejection and submit that a *prima facie* case of obviousness has not been presented.

In order to establish a *prima facie* case of obviousness under § 103, the Examiner must establish all three of the following essential criteria: (1) the cited references must teach or suggest each of the claimed elements; (2) there must be a motivation in the cited prior art to

combine the references as suggested by the Examiner; and (3) the cited references must provide a basis for a reasonable expectation for success. The motivation to combine and the reasonable expectation for success must come from the cited prior art and not the Applicants' specification. Further, it is not enough that the references can be modified absent a suggestion in the cited prior art to undertake such modification.

First, as acknowledged by the Examiner, PCT '486 does not recite a process for the polymerization of ethylene and cyclic olefin monomers. Second, as discussed above, PCT '486 does not describe a specific class of compounds used in the polymerization of ethylene as in the presently claimed invention. The only specific example of ethylene polymerization is example 7, where isopropyledene(cyclopentadienyl)(7-cyclopentadithiophene) is used. The reference, therefore does not teach or suggest the process of the presently claimed invention which is directed to a process for preparation of ethylene polymers using a substituted metallocene compound. Santi clearly does not remedy the deficiencies of PCT '486, particularly in view of the fact that the class of metallocene disclosed by Santi is completely different than either those in PCT '486 or in the presently claimed invention. Applicants respectfully submit therefore that there is no motivation in the cited art to combine the references as suggested by the Examiner, and that no showing of reasonable expectation of success has been made. Therefore, none of the elements required for a *prima facie* case of obviousness have been made out. However, even if a *prima facie* case of obviousness has been made, Applicants respectfully submit that unexpected results have been disclosed in the present specification that overcome such a case. The performance of the compound disclosed in PCT '486 is shown in comparative examples 8, 9, 18, and 23 of the present specification, which clearly illustrates that when used in a process for copolymerizing ethylene, the compound of the reference exhibits lower activity.

Reconsideration and withdrawal of the rejection are respectfully requested.

(f) Response to Rejection of Claims 22 and 25 under 35 U.S.C. § 103(a) as being unpatentable over PCT '486.

In response to the rejection under 35 U.S.C. § 103(a) as being unpatentable over PCT '486, Applicants respectfully traverse the rejection and submit that a *prima facie* case of obviousness has not been presented.

First, Applicants have cancelled claim 22. Applicants respectfully submit that this rejection is now moot.

With respect to claim 25, in order to establish a *prima facie* case of obviousness under § 103 based on a single reference, the Examiner must establish all three of the following essential criteria: (1) the cited reference must teach or suggest each of the claimed elements; (2) there must be a motivation in the cited prior art to modify the reference as suggested by the Examiner; and (3) the cited reference must provide a basis for a reasonable expectation for success. The motivation to combine and the reasonable expectation for success must come from the cited prior art and not the Applicants' specification. Further, it is not enough that a reference can be modified absent a suggestion in the cited prior art to undertake such modification.

As discussed above, PCT '486 does not describe a specific class of compounds used in the polymerization of ethylene as in the presently claimed invention. The only specific example of ethylene polymerization is example 7, where isopropyledene(cyclopentadienyl)(7-cyclopentadithiophene) is used. The reference therefore does not teach or suggest the process of the presently claimed invention which is directed to a process for preparation of ethylene

polymers using a substituted metallocene compound. Further, although the Examiner contends that the reference discloses structural analogues in which substituents lie along the ligand periphery, so that it would have been obvious to derive other structural analogues containing different substituents; the presently claimed invention, as exemplified in claim 25, claims a structure having a specific substitution pattern, that gives rise to specific performance effects as shown in the examples of the specification. In addition, the Examiner has cited structures *g* and *l* of the reference. However, these structures are only a part of a metallocene compound. Applicants respectfully submit therefore that the reference does not teach all the elements of the claims, nor has it been shown that there is a motivation to modify the references as suggested by the Examiner, or that the reference provides a reasonable expectation of success. Therefore, none of the necessary elements of a *prima facie* case of obviousness have been made out. However, even if a *prima facie* case of obviousness has been made, Applicants respectfully submit that unexpected results have been disclosed in the present specification that overcome such a case. The performance of the compound disclosed in PCT '486 is shown in comparative examples 8, 9, 18, and 23 of the present specification, which clearly illustrates that when used in a process for copolymerizing ethylene, the compound of the reference exhibits lower activity.

Reconsideration and withdrawal of the rejection are respectfully requested.

(g) Response to Rejection of Claims 16, 17 and 26 under 35 U.S.C. § 103(a) as being unpatentable over Kraak.

In response to the rejection under 35 U.S.C. § 103(a) as being unpatentable over Kraak, Applicants respectfully traverse the rejection and submit that a *prima facie* case of obviousness has not been presented.

In order to establish a *prima facie* case of obviousness under § 103 based upon a single reference, the Examiner must establish all three of the following essential criteria: (1) the cited reference must teach or suggest each of the claimed elements; (2) there must be a motivation in the cited prior art to modify the reference as suggested by the Examiner; and (3) the cited reference must provide a basis for a reasonable expectation for success. The motivation to combine and the reasonable expectation for success must come from the cited prior art and not the Applicants' specification. Further, it is not enough that a reference can be modified absent a suggestion in the cited prior art to undertake such modification.

Claims 16, 17 and 26 are directed to a metallocene ligand represented by formula (II) of the claims, and a process for preparing it. In contrast, Kraak discloses the synthesis of unsubstituted cyclopentadithiophenes. The reference does not disclose a metallocene ligand of the claimed formula, nor does the reference disclose a process for preparing such a metallocene ligand. There is clearly no motivation outside of the present specification to modify the reference as suggested by the Examiner. Further, there cannot be a reasonable expectation of success for modifying the reference to arrive at the substituted metallocene ligand and process of the cited claims, because a metallocene ligand is not even disclosed by the reference, much less the specific substitution pattern of the metallocene ligand. Therefore none of the elements of a *prima facie* case have been made out.

Reconsideration and withdrawal of the rejection are respectfully requested.

(h) Response to Rejection of Claim 19 under 35 U.S.C. § 103(a) as being unpatentable over Kraak in view of the reference Organometallics VCH: New York, 1989, p. 19-29 to Elschenbroich et al.

In response to the rejection under 35 U.S.C. § 103(a) as being unpatentable over Kraak in view of the reference Organometallics VCH: New York, 1989, p. 19-29 to Elschenbroich et al. ("Elschenbroich"), Applicants respectfully traverse the rejection and submit that a *prima facie* case of obviousness has not been presented.

In order to establish a *prima facie* case of obviousness under § 103, the Examiner must establish all three of the following essential criteria: (1) the cited references must teach or suggest each of the claimed elements; (2) there must be a motivation in the cited prior art to combine the references as suggested by the Examiner; and (3) the cited references must provide a basis for a reasonable expectation for success. The motivation to combine and the reasonable expectation for success must come from the cited prior art and not the Applicants' specification. Further, it is not enough that a reference can be modified absent a suggestion in the cited prior art to undertake such modification.

As discussed above, Kraak discloses the synthesis of unsubstituted cyclopentadithiophenes. Kraak does not disclose a substituted metallocene ligand of the presently claimed formula, nor does the reference disclose a process for preparing such a metallocene ligand. Kraak thus does not teach or suggest the substituted metallocene ligand of the present invention. Elschenbroich's disclosure of the use of TMEDA with n-BuLi oligmers does not remedy the deficiencies of Kraak. Nor does Elschenbroich disclose cyclopentadiothiophenes, either substituted or unsubstituted. Applicants therefore submit that none of the requirements of a *prima facie* case have been made out. Reconsideration and withdrawal of the rejection are respectfully requested.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version With Markings to Show Changes

Made."

Applicants respectfully request that a timely Notice of Allowance be issued in this case. Should the Examiner have questions or comments regarding this application or this amendment, Applicants' attorney would welcome the opportunity to discuss the case with the Examiner.

It is not believed that any fee is required for entry and consideration of this Amendment; nevertheless, the Commissioner is hereby authorized to charge U.S. PTO Deposit Account 08-2336 in the amount of any such required fee.

This is intended to be a complete response to the Office Action mailed April 15, 2002.

Respectfully submitted,

LUIGI RESCONI ET AL.

July 11, 2002 (Date) By: William R. Reid

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I hereby certify that this correspondence is being deposited with sufficient postage thereon with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231 on July 12, 2002.

July 12, 2002
Date of Signature

VERSION WITH MARKINGS TO SHOW CHANGES MADE

Filed on July 12, 2002

In the Specification

Paragraph of Table 1.

--Table 1 (ethylene homopolymerization)

Ex.	Zirconocene		AlR_3		Al/Zr	hexane	Time	yield	activity	I.V.
	Type	(mg)	Type	(mmol)	(mol)	(ml)	(min)	(g)	(Kg/gZr.h)	(dL/g)
1	Z_S-51	0.4	MAO	2.3	3000	100	5	1.5	256.9	3.97
2	Z_S-51	0.3	TIOA-H_2O	1.7	3000	100	20	0.09	5.1	-
3	[Z_S-50] Z_S-0	0.1	MAO	0.22	1050	100	10	1.0	306.1	3.4
4	Z_S-1	0.1	MAO	0.22	1060	100	8	1.65	663.0	4.0
5	Z_S-3	0.08	MAO	0.16	1000	100	10	2.13	929.6	>4.3
6	Z_S-3	0.11	MAO	0.21	1060	100	2	1.0	1496.4	-
7	Z_S-2	0.11	MAO	0.23	1080	150 *	15	5.8	1196.4	4.5
8 (comp.)	Z_S-50	0.5	MAO	1.2	1060	100	10	1.7	97.7	2.6
9 (comp.)	Z_S-50	0.5	TIOA-H_2O	1.16	1030	100	30	0.05	1.0	-
10	Z_S-0	0.5	MAO	0.21	200	500	60	15.3	159.2	2.1
11	Z_S-1	0.4	MAO	0.16	195	500	60	21.1	282.6	2.3
12	Z_S-3	0.3	MAO	0.11	195	500	60	30.1	583.3	5.1

*heptane--

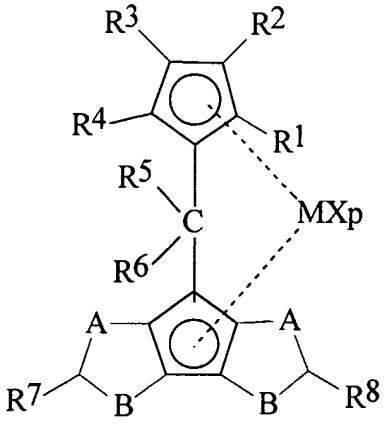
In the Claims

Claims 8 and 22 have been cancelled.

Claims 1, 2, 4, 6, 9, 10, 16-21, and 23-27 have been changed by deleting the characters in brackets and adding the underlined material, as reported below. For the Examiner's convenience, even the unchanged claims have been reported in the following.

1. (Twice Amended) A process for the preparation of polymers of ethylene comprising the polymerization reaction of ethylene and optionally one or more olefins in the presence of a catalyst comprising the product obtained by contacting:

(A) a metallocene compound of formula (I):



(I)

wherein

the rings containing A and B have a double bond in the allowed position having an aromatic character;

A and B are selected from sulfur (S), oxygen (O) or CR^9, R^9 being hydrogen, a C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl, C_2-C_{20}-alkenyl, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl, or C_7-C_{20}-arylalkyl radical, optionally containing heteroatoms belonging to groups 13 or 15-17 of the Periodic Table of the Elements, with the proviso that if A is S or O, B is CR^9 or if B is S or O, A is CR^9, and A and B cannot simultaneously be CR^9;

R^1, R^2, R^3, R^4, R^5, R^6, R^7, and R^8 which may be the same as or different from each other, are hydrogen, a C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl, C_2-C_{20}-alkenyl, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl,

or C_7-C_{20}-arylalkyl radical, optionally containing heteroatoms belonging to groups 13 or 15-17 of the Periodic Table of the Elements, and at least two adjacent substituents R^1 and R^2, R^3 and R^4, or R^5 and R^6 can form a ring comprising 4 to 8 atoms[, optionally bearing substituents], and where at least one of R^1, R^2, R^3, R^4, R^7 and R^8 is not hydrogen;

M is an atom of a transition metal selected from group 3, 4, 5, 6 or the lanthanide or actinide groups in the Periodic Table of the Elements,

X, which may be the same as or different from each other, is hydogen, halogen atom, a R^{10}, OR^{10}, OSO_2CF_3, $OCOR^{10}$, SR^{10}, NR^{10}_2 or PR^{10}_2 group, wherein the substituents R^{10} are hydrogen, a C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl, C_2-C_{20}-alkenyl, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl, or C_7-C_{20}-arylalkyl radical, optionally containing heteroatoms belonging to groups 13 or 15-17 of the Periodic Table of the Elements;

p is an integer of from 1 to 3, being equal to the oxidation state of the metal M minus 2;

[with the proviso that said metallocene compound is different from:

isopropylidene(cyclopentadienyl)-7-(cyclopentadienyl-[1,2-b:4,3-b']-dithiophene)zirconium dichloride;]

and

(B) at least one of an alumoxane and a compound [capable of forming an alkyl metallocene cation] of formula D^+E^-, wherein D^+ is a Brønsted acid, which is able to give a proton and to react irreversibly with a substituent X of the metallocene of formula (I) and E^- is a compatible anion, which is able to stabilize the active catalytic species originating from the reaction of the two compounds, and which is sufficiently labile to be able to be removed by an olefinic monomer.

2. (Twice Amended) The process according to claim 1, wherein in the metallocene compound

of formula (I) the transition metal M is selected from the group consisting of titanium, zirconium [or]and hafnium.

3. The process according to claim 1, wherein in the metallocene compound of formula (I) the X substituents are chlorine atoms or methyl groups.

4. (Twice Amended) The process according to claim 1, wherein in the metallocene compound of formula (I) A and B are sulfur or a CH group, [either A or B being different from CH]and if A is a CH group, B is sulfur, or if B is a CH group, A is sulfur, R^5 and R^6 are C_1-C_{20}-alkyl groups, and R^7 is equal to R^8.

5. The process according to claim 4, wherein R^1, R^3 and R^4 are hydrogen, R^5 and R^6 are methyl, R^2 is C_1-C_{20}-alkyl groups and R^7 and R^8 are hydrogen or methyl groups.

6. (Twice Amended) The process according to claim 1, wherein said alumoxane is obtained by contacting water with an organo-aluminium compound of formula $H_jAlR^{12}_{3-j}$ or $H_jAl_2R^{12}_{6-j}$, where R^{12} substituents, same or different, are hydrogen atoms, C_1-C_{20}-alkyl, [C_3-C_{20}-cyclalkyl]C_3-C_{20}-cycloalkyl, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl or C_7-C_{20}-arylalkyl, optionally containing silicon or germanium atoms[with the proviso that at least one R^{12} is different from halogen], and j ranges from 0 to 1, being also a non-integer number.

7. The process according to claim 6, wherein said alumoxane is methylalumoxane (MAO), tetra-(isobutyl)alumoxane (TIBAO), tetra-(2,4,4-trimethyl-pentyl)alumoxane (TIOAO), tetra-(2,3-dimethylbutyl)alumoxane (TDMBAO) or tetra-(2,3,3-trimethylbutyl)alumoxane (TTMBAO).

9. (Amended) The process according to claim [8]1, wherein the anion [Z^-]E^- comprises one or more boron atoms.

10. (Twice Amended) The process according to claim 1, wherein the process is carried out in

the presence of an alpha-olefin selected from the group consisting of propylene, 1-butene, 1-pentene, 1-hexene, 4-methyl-1-pentene, 1-octene, 1-decene [or]and 1-dodecene.

11. The process according to claim 10, wherein said alpha-olefin is 1-hexene or propylene.

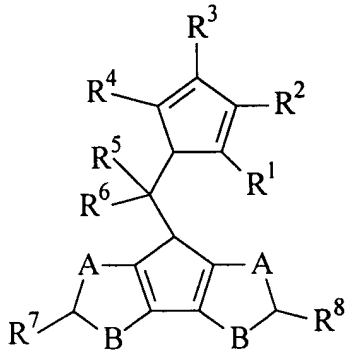
12. The process according to claim 10, wherein the molar content of alpha-olefin derived units is between 0% and 60%.

13. The process according to claim 1, wherein the process is carried out in the presence of a cyclic comonomer.

14. The process according to claim 13, wherein the cyclic comonomer is 5-ethyliden-2-norbornene.

15. The process according to claim 13, wherein the molar content of the cyclic comonomer is between 0 mol% and 30 mol%.

16. (Twice Amended) A process for the preparation of a ligand of formula (II):



(II)

or its double bond isomers,

wherein

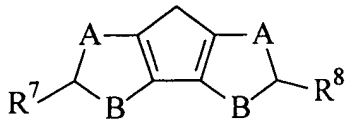
A and B are selected from sulfur (S), oxygen (O) or CR^9, R^9 being hydrogen, a C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl, C_2-C_{20}-alkenyl, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl, or C_7-C_{20}-arylalkyl radical, optionally containing heteroatoms belonging to groups 13 or 15-17 of the Periodic Table of the Elements, with the proviso that if A is S or O, B is CR^9 or if B is S or O, A is CR^9, and A and B

cannot simultaneously be CR^9;

R^1, R^2, R^3, R^4, R^5, R^6, R^7, and R^8 which may be the same as or different from each other, are hydrogen, a C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl, C_2-C_{20}-alkenyl, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl, or C_7-C_{20}-arylalkyl radical, optionally containing heteroatoms belonging to groups 13 or 15-17 of the Periodic Table of the Elements, and at least two adjacent substituents R^1 and R^2 , R^3 and R^4, or R^5 and R^6 can form a ring comprising 4 to 8 atoms[, optionally bearing substituents]wherein at least one of the substituents R^1, R^2, R^3, R^4, R^7, and R^8 is not hydrogen;

comprising the following steps:

i) treating the compound of formula (III) with at least one equivalent of a base;



(III)

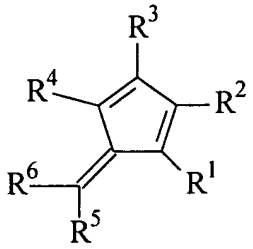
wherein the rings containing A and B have a double bond in the allowed position having an aromatic character;

wherein A and B are selected from sulfur (S), oxygen (O) or CR^9, R^9 being hydrogen, a C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl, C_2-C_{20}-alkenyl, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl, or C_7-C_{20}-arylalkyl radical, optionally containing heteroatoms belonging to groups 13 or 15-17 of the Periodic Table of the Elements, with the proviso that if A is S or O, B is CR^9 or if B is S or O, A is CR^9, and A and B cannot simultaneously be CR^9;

R^7, and R^8 which may be the same as or different from each other, are hydrogen, a C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl, C_2-C_{20}-alkenyl, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl, or C_7-C_{20}-arylalkyl radical, optionally containing heteroatoms belonging to groups 13 or 15-17

of the Periodic Table of the Elements;

ii) contacting the thus obtained corresponding anionic compound from step i) with a compound of formula (IV):



(IV)

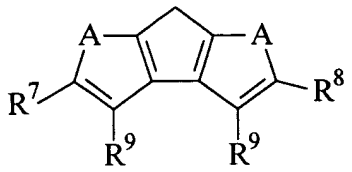
wherein

R^1, R^2, R^3, R^4, R^5, R^6 which may be the same as or different from each other, are hydrogen, a C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl, C_2-C_{20}-alkenyl, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl, or C_7-C_{20}-arylalkyl radical, optionally containing heteroatoms belonging to groups 13 or 15-17 of the Periodic Table of the Elements, and at least two adjacent substituents R^1 and R^2, R^3 and R^4, or R^5 and R^6 can form a ring comprising 4 to 8 atoms[, optionally bearing substituents]; and

iii) treating the thus obtained product from step ii) with a protonating agent.

17. (Twice Amended) The process for the preparation of a ligand of formula (II) according to claim 16 wherein the base used in step i) is selected from hydroxides, hydrides of alkali- and earth-alkali metals, metallic sodium, potassium or organometallic lithium salts, and the protonating agent used in step iii) is [a quaternary ammonium salt]ammonium chloride.

18. (Twice Amended) A process for preparing the compound of formula VII



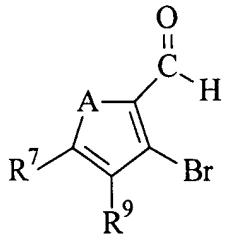
(VII)

wherein A is sulfur (S) or oxygen (O), R^9 is hydrogen, a C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl, C_2-C_{20}-alkenyl, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl, or C_7-C_{20}-arylalkyl radical, optionally containing heteroatoms belonging to groups 13 or 15-17 of the Periodic Table of the Elements;

R^7 and R^8 which may be the same as or different from each other, are [hydrogen,]a C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl, C_2-C_{20}-alkenyl, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl, or C_7-C_{20}-arylalkyl radical, optionally containing heteroatoms belonging to groups 13 or 15-17 of the Periodic Table of the Elements;

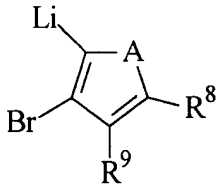
comprising the following steps:

i) treating a compound of formula (V):



(V)

wherein A is sulfur or oxygen, with a compound of formula (VI):



(VI)

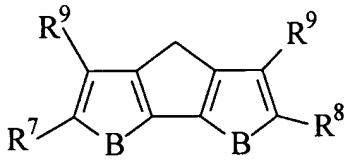
wherein A is sulfur or oxygen;

ii) contacting the thus obtained product from step i) with a reducing agent in a molar ratio between said reducing agent and the product obtained under i) of at least 1;

iii) contacting the product obtained under ii) with a compound selected from an organolithium compound, sodium or potassium in a molar ratio between said compound and the product obtained in step ii) of equal to or greater than 2; and

iv) treating the thus obtained product under step iii) with an agent selected from the group consisting of copper (II) chloride, iodine [or]and Mg/Pd, in order to obtain a compound of general formula (VII).

19. (Twice Amended) A process for preparing the compound of formula (X)



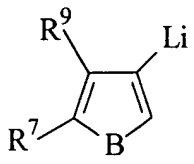
(X)

wherein B is sulfur or oxygen and R^9 is hydrogen, a C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl, C_2-C_{20}-alkenyl, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl, or C_7-C_{20}-arylalkyl radical, optionally containing heteroatoms belonging to groups 13 or 15-17 of the Periodic Table of the Elements;

R^7 and R^8 which may be the same as or different from each other, are [hydrogen,]a C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl, C_2-C_{20}-alkenyl, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl, or C_7-C_{20}-arylalkyl radical, optionally containing heteroatoms belonging to groups 13 or 15-17 of the Periodic Table of the Elements;

comprising the following steps:

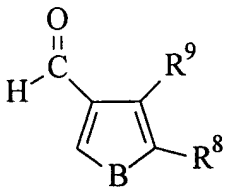
i) contacting a compound of formula (VIII):



(VIII)

wherein B is sulfur or oxygen,

with a compound of formula (IX):



(IX)

wherein B is sulfur or oxygen,

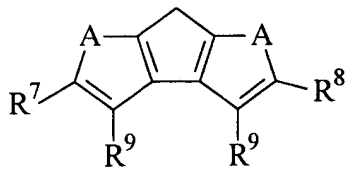
and subsequently treating with a neutralization agent;

ii) treating the thus obtained product from step i) with a reducing agent in a molar ratio between said reducing agent and the compound obtained under i) of at least 1;

iii) contacting the thus obtained product from step ii) with a mixture of an organolithium compound and tetramethylethylenediamine (TMEDA) in a molar ratio between said mixture and the product obtained under ii) of at least 2; and

iv) contacting the thus obtained product from step iii) with an agent selected from the group consisting of copper (II) chloride, iodine [or]and Mg/Pd, in order to obtain a compound of formula (X).

20 (Twice Amended) A process for preparing the compound of formula (VII)



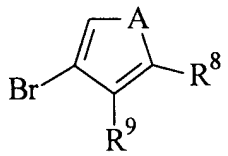
(VII)

wherein A is sulfur (S) or oxygen (O), R^9 is hydrogen, a C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl, C_2-C_{20}-alkenyl, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl, or C_7-C_{20}-arylalkyl radical, optionally containing heteroatoms belonging to groups 13 or 15-17 of the Periodic Table of the Elements;

R^7 and R^8 which may be the same as or different from each other, are [hydrogen,]a C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl, C_2-C_{20}-alkenyl, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl, or C_7-C_{20}-arylalkyl radical, optionally containing heteroatoms belonging to groups 13 or 15-17 of the Periodic Table of the Elements;

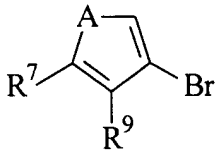
comprising the following steps:

i) contacting an equimolar mixture of compounds of formulae (XI) and (XII):



(XI)

and



(XII)

wherein A [are]is sulfur or oxygen,

with a Lewis acid or a mixture of a Lewis acid and a protonic acid;

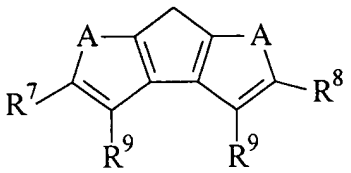
ii) treating the thus obtained product from step i) with CH_2O in a molar ratio between said mixture and CH_2O of a range between 10:1 and 1:10;

iii) contacting the thus obtained product from step ii) with a compound selected from an organolithium compound, sodium or potassium; and

iv) contacting the thus obtained product from step iii) with an agent selected from the group consisting of copper (II) chloride, iodine [or]and Mg/Pd, in order to obtain a compound of general formula (VII).

21. (Twice Amended) The process according to claim 20, wherein the Lewis acid is selected from the group consisting of zinc dichloride, cadmium dichloride, mercury dichloride, tin tetrachloride, trifluoroborane, zirconium tetrachloride, [or]and titanium tetrachloride.

23 (Twice Amended) A process for preparing the compound of formula (VII)



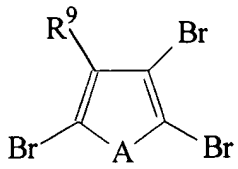
(VII)

wherein A is sulfur (S) or oxygen (O), R^9 is hydrogen, a C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl, C_2-C_{20}-alkenyl, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl, or C_7-C_{20}-arylalkyl radical, optionally containing heteroatoms belonging to groups 13 or 15-17 of the Periodic Table of the Elements;

R^7 and R^8 which may be the same as or different from each other, are [hydrogen,]a C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl, C_2-C_{20}-alkenyl, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl, or C_7-C_{20}-arylalkyl radical, optionally containing heteroatoms belonging to groups 13 or 15-17 of the Periodic Table of the Elements;

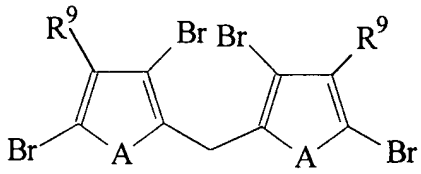
comprising the following steps:

i) contacting a compound of formula (XIII):



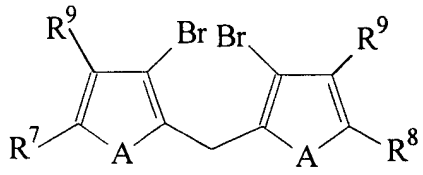
(XIII)

with a base selected from an organolithium compound, sodium or potassium; treating with a formic ester, wherein the molar ratio between said ester and the compound of formula (XIII) is at least 1:2, and subsequently treating the obtained product with a reducing agent in order to obtain a compound of formula (XIV):



(XIV)

ii) contacting the compound of formula (XIV) with a base selected from an organolithium compound, sodium or potassium and subsequently treating the dimetallated compound with an alkylating agent to obtain the compound of formula (XV);



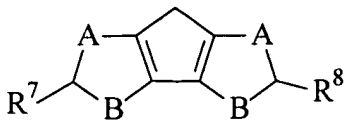
(XV)

and

iii) contacting the alkylated compound obtained by step ii) with a coupling agent selected from the group consisting of copper (II) chloride, iodine [or]and Mg/Pd in

order to obtain the compound of formula (VII).

24. (Twice Amended) A compound of formula (III)



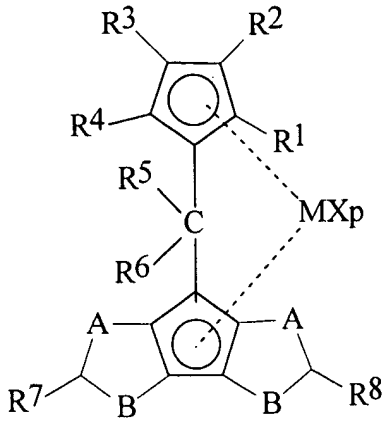
(III)

wherein the rings containing A and B have a double bond in the allowed position having an aromatic character; A and B are

selected from sulfur (S), oxygen (O) or CR^9, R^9 being hydrogen, a C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl, C_2-C_{20}-alkenyl, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl, or C_7-C_{20}-arylalkyl radical, optionally containing heteroatoms belonging to groups 13 or 15-17 of the Periodic Table of the Elements, with the proviso that if A is S or O, B is CR^9 or if B is S or O, A is CR^9, and A and B cannot simultaneously be CR^9;

and R^7, and R^8 which may be the same as or different from each other, are a C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl, C_2-C_{20}-alkenyl, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl, or C_7-C_{20}-arylalkyl radical, optionally containing heteroatoms belonging to groups 13 or 15-17 of the Periodic Table of the Elements.

25 (Twice Amended) A metallocene compound of formula (I):



(I)

wherein

A and B are selected from sulfur (S), oxygen (O) or CR^9, R^9 being hydrogen, a C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl, C_2-C_{20}-alkenyl, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl, or C_7-C_{20}-arylalkyl radical, optionally containing heteroatoms belonging to groups 13 or 15-17 of the Periodic Table of the Elements, with the proviso that if A is S or O, B is CR^9 or if B is S or O, A is CR^9, and A and B cannot simultaneously be CR^9;

R^1, R^2, R^3, R^4, R^5, R^6, R^7, and R^8 which may be the same as or different from each other, are hydrogen, a C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl, C_2-C_{20}-alkenyl, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl, or C_7-C_{20}-arylalkyl radical, optionally containing heteroatoms belonging to groups 13 or 15-17 of the Periodic Table of the Elements, and at least two adjacent substituents R^1 and R^2, R^3 and R^4, or R^5 and R^6 can form a ring comprising 4 to 8 atoms[, optionally bearing substituents]; and where at least one of R^1, R^2, R^3, R^4, R^7 and R^8 is not hydrogen;

M is an atom of a transition metal from group 3, 4, 5, 6 or the lanthanide or actinide groups in the Periodic Table of the Elements,

X, which may be the same as or different from each other, is hydogen, halogen atom, a R^{10}, OR^{10}, OSO_2CF_3, $OCOR^{10}$, SR^{10}, NR^{10}_2 or PR^{10}_2 group, wherein the substituents R^{10} are hydrogen, a C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl, C_2-C_{20}-alkenyl, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl, or C_7-C_{20}-arylalkyl radical, optionally containing heteroatoms belonging to groups 13 or 15-17 of the Periodic Table of the Elements;

p is an integer of from 1 to 3, being equal to the oxidation state of the metal M minus 2;

and wherein the rings containing A and B have a double bond in the allowed position having an aromatic character; and

with the proviso that said metallocene compound is different from:

[isopropylidene(cyclopentadienyl)-7-(cyclopentadithiophene)zirconium dichloride,]

isopropylidene(3-methyl-cyclopentadienyl)-7-(cyclopentadithiophene)zirconium dichloride;

isopropylidene(3-ethyl-cyclopentadienyl)-7-(cyclopentadithiophene)zirconium dichloride;

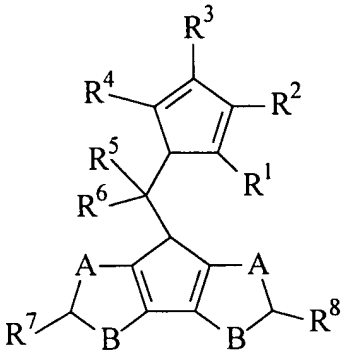
isopropylidene(3-t-butyl-cyclopentadienyl)-7-(cyclopentadithiophene)zirconium dichloride;

isopropylidene(3-n-butyl-cyclopentadienyl)-7-(cyclopentadithiophene)zirconium dichloride;

isopropylidene(3-trimethylsilyl-cyclopentadienyl)-7-(cyclopentadithiophene)zirconium dichloride and

isopropylidene (3-i-propylcyclopentadienyl)-7-(cyclopentadithiophene)zirconium dichloride.

26 (Twice Amended) A ligand of formula (II):



(II)

or its double bond isomers,

wherein the rings containing A and B have double bonds in any of the allowed positions, having an aromatic character and

A and B are selected from sulfur (S), oxygen (O) or CR^9, R^9 being hydrogen, a C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl, C_2-C_{20}-alkenyl, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl, or C_7-C_{20}-arylalkyl radical, optionally containing heteroatoms belonging to groups 13 or 15-17 of the Periodic Table of the Elements, with the proviso that if A is S or O, B is CR^9 or if B is S or O, A is CR^9, and A and B cannot simultaneously be CR^9;

R^1, R^2, R^3, R^4, R^5, R^6, R^7, and R^8 which may be the same as or different from each other, are hydrogen, a C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl, C_2-C_{20}-alkenyl, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl, or C_7-C_{20}-arylalkyl radical, optionally containing heteroatoms belonging to groups 13 or 15-17 of the Periodic Table of the Elements, and at least two adjacent substituents R^1 and R^2, R^3 and R^4, or R^5 and R^6 can form a ring comprising 4 to 8 atoms[, optionally bearing substituents] and wherein at least one of the substituents R^1, R^2, R^3, R^4, R^7, and R^8 is not hydrogen;

with the proviso that said ligands are different from:

[isopropylidene(cyclopentadiene)-7-(cyclopentadithiophene),]

isopropylidene(3-methyl-cyclopentadiene)-7-(cyclopentadithiophene);

isopropylidene(3-ethyl-cyclopentadiene)-7-(cyclopentadithiophene);

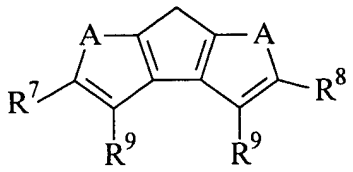
isopropylidene(3-t-butyl-cyclopentadiene)-7-(cyclopentadithiophene);

isopropylidene(3-n-butyl-cyclopentadiene)-7-(cyclopentadithiophene);

isopropylidene(3-trimethylsilyl-cyclopentadiene)-7-(cyclopentadithiophene) and

isopropylidene (3-i-propylcyclopentadiene)-7-(cyclopentadithiophene).

27 (Amended) A process for preparing the compound of formula (VII)



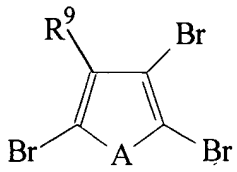
(VII)

wherein A is sulfur (S) or oxygen (O), R^9 is hydrogen, a C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl, C_2-C_{20}-alkenyl, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl, or C_7-C_{20}-arylalkyl radical, optionally containing heteroatoms belonging to groups 13 or 15-17 of the Periodic Table of the Elements;

R^7 and R^8 which may be the same as or different from each other, are [hydrogen,]a C_1-C_{20}-alkyl, C_3-C_{20}-cycloalkyl, C_2-C_{20}-alkenyl, C_6-C_{20}-aryl, C_7-C_{20}-alkylaryl, or C_7-C_{20}-arylalkyl radical, optionally containing heteroatoms belonging to groups 13 or 15-17 of the Periodic Table of the Elements;

comprising the following steps:

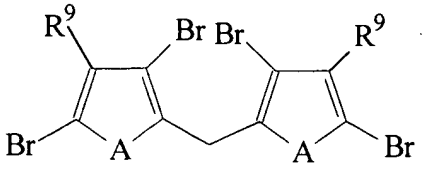
i) contacting a compound of formula (XIII):



(XIII)

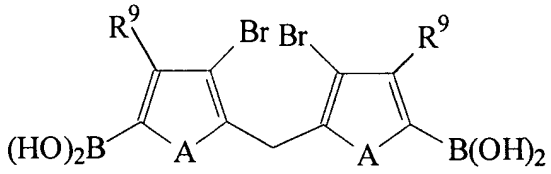
with a base selected from an organolithium compound, sodium or potassium; treating with a formic ester, wherein the molar ratio between said ester and the compound of formula (XIII) is at least 1:2, and subsequently treating the obtained product with a reducing agent in order

to obtain a compound of formula (XIV):



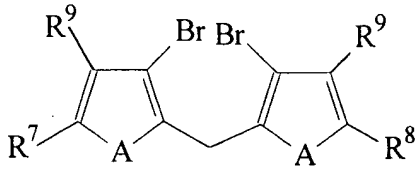
(XIV)

ii) contacting the compound of formula (XIV) with a base selected from an organolithium compound, sodium or potassium and subsequently treating the dimetallated compound with an ester of boric acid and a protonating agent in order to obtain the compound of formula (XVI):



(XVI)

and subsequently contacting with a mixture of an alkylating agent in the presence of an transition metal complex compound for obtaining the compound of formula (XV);



(XV)

and

iii) contacting the alkylated compound obtained by step ii) with a coupling agent selected from the group consisting of copper (II) chloride, iodine [or]and Mg/Pd in order to

obtain the compound of formula (VII).